AG

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 December 2001 (20.12.2001)

PCT

(10) International Publication Number
WO 01/96593 A3

(51) International Patent Classification[7]: C07H 21/04, C07K 14/00, C12N 9/12, 15/63, 15/85, 15/86, C12Q 1/00, 1/42

(21) International Application Number: PCT/US01/19308

(22) International Filing Date: 15 June 2001 (15.06.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/594,655 15 June 2000 (15.06.2000) US

(71) Applicant *(for all designated States except US)*: **CYTOKINETICS, INC.** [US/US]; 280 East Grand Avenue, South San Francisco, CA 94080 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BERAUD, Christophe** [FR/US]; 83 Scotia Avenue, San Francisco, CA 94124 (US). **CRAVEN, Andrew** [US/US]; 1316 10th Avenue, San Francisco, CA 94102 (US). **YU, Ming** [CN/US]; 1339 Marlin Avenue, Foster City, CA 94044 (US). **SAKOWICZ, Roman** [PL/US]; 1119 Nimitz Lane, Foster City, CA 94404 (US). **PATEL, Umesh, A.** [GB/GB]; 74 Winfold Road, Waterbeach, Cambridge, Cambridgeshire CB5 9QF (GB). **DAVIES, Katherine, A.** [GB/GB]; Baytree Cottage, 1 Apthorpe Street, Fulbourn, Cambridge CB1 5EY (GB).

(74) Agents: **LIEBESCHUETZ, Joe** et al.; Townsend and Townsend and Crew LLP, 2 Embarcadero Center, 8th Floor, San Francisco, CA 94111 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
16 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 01/96593 A3

(54) Title: NOVEL MOTOR PROTEINS AND METHODS FOR THEIR USE

(57) Abstract: The invention provides isolated nucleic acid and amino acid sequences of HsKip3, antibodies to HsKip3, methods of screening for HsKip3a modulators using biologically active HsKip3, and kits for screening for HsKip3a modulators

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/19308

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07H 21/04; C07K 14/00; C12N 9/12, 15/63, 15/85, 15/86; C12Q 1/00, 1/42

US CL : 435/4, 21, 194, 320.1, 325; 530/350; 536/23.5

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/4, 21, 194, 320.1, 325; 530/350; 536/23.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN - MEDICINE: HsKif17, kinesin, microtubule-stimulated ATPase, motor domain, inhibitor.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	SAKOWICZ, R, et al. A marine natural product inhibitor of kinesin motors. Science, 10 April 1998, Vol. 280, pp. 292-295; see entire document.	17 --- 14-17
X --- Y	TUCKER, C, et al. Probing the kinesin-microtubule interaction. Journal of Biological Chemistry, 04 April 1997, Vol. 272, No. 14, pp. 9481-9488; see entire document.	17 --- 14-17
A	HIROKAWA, N. Kinesin and dynein superfamily proteins and the mechanism of organelle transport. Science, 23 January 1998, Vol. 279, pp. 519-526.	1-18
X --- Y	DATABASE GenBank, Accession No. BG420786, Unpublished, NIH-MGC http://mgc.nci.hih.gov/. 1999; polynucleotide sequence comprises a sequence that is greater than 60% identical to SEQ ID NO: 1.	18 --- 1, 2, and 4-18
X --- Y	DATABASE GenBank, Accession No. AW154058, Unpublished, Sugano, S, et al. 1999; cloned polynucleotide sequence encodes a kinesin that has an amino acid sequence that is 100% identical to SEQ ID NO: 2.	1, 2, 4, 6, 8, 10, 11, 13, and 18 --- 1, 2, and 4-18

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 October 2001 (31.10.2001)	28 JAN 2002
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Stephen L. Rawlings, Ph.D. Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/19308

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-16 and 18, drawn to an isolated nucleic acid molecule, an expression vector comprising said nucleic acid molecule, a host cell transfected with said vector, a protein encoded by said nucleic acid molecule, and a method for screening modulators of the protein encoded by said nucleic acid molecule.

Group II, claim(s) 17, drawn to a compound that modulates the protein encoded by said nucleic acid molecule.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is an isolated nucleic acid molecule.

The special technical feature of Group II is a compound that modulates a protein.

Accordingly, Groups I and II are not linked by the same or corresponding special technical feature so as to form a single general inventive concept. Furthermore, PCT Rules 13.1 and 13.2 do not provide for an invention directed to claims drawn to more than first claimed product, more than the first claimed method for producing the product, or more than the first claimed method for using the product.